

Serial No. 10/541,691

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Amendments To The Claims:

1.-10. (cancelled).

11. (previously presented) A process for producing single-crystal structures from metallic superalloys, comprising:

providing a substrate with a single-crystal structure from an epitaxial growth of a layer material via a first material application process;

applying an intermediate layer where no single-crystal or directional structure occurs on the substrate; and

epitaxially growing the layer material on the intermediate layer.

12. (previously presented) The process as claimed in claim 11, wherein the structure is a component, a workpiece, a blade, or a vane.

13. (previously presented) The process as claimed in claim 11, wherein the substrate has a plurality of single-crystal structures from the epitaxial growth of the layer material.

14. (previously presented) The process as claimed in claim 11, wherein a heat treatment transforms at least part of the intermediate layer with the substrate into a region having a crystalline structure.

15. (previously presented) The process as claimed in claim 11, wherein a heat treatment transforms at least part of the intermediate layer with the layer material into a region having a crystalline structure.

16. (previously presented) The process as claimed in claim 11, wherein the intermediate layer is generated electrochemically.

17. (previously presented) The process as claimed in claim 11, wherein the intermediate layer is applied with a non-directional microstructure.

Serial No. 10/541,691**Atty. Doc. No. 2002P17431WOUS**

18. (previously presented) The process as claimed in claim 11, wherein the intermediate layer is applied with a directional microstructure.

19. (previously presented) The process as claimed in claim 11, wherein the intermediate layer is applied via a second material application process.

20. (previously presented) The process as claimed in claim 11, wherein a composition ratio of constituents for the intermediate layer is adapted to a main composition ratio of main constituents of the substrate.

21. (previously presented) The process as claimed in claim 11, wherein a material composition of the intermediate layer at least approximately corresponds to the material composition of the substrate.

22. (currently amended) A component formed from a metallic superalloy, comprising:
a substrate having at least partially single-crystal structures;
an intermediate layer having no single-crystal or directional structure in-bonded to the
substrate; and
a layer material with a single-crystal structure is-present-formed on the intermediate layer.

23. (previously presented) The component as claimed in claim 22, wherein a composition of the layer material at least approximately corresponds to a material composition of the substrate.

24. (currently amended) The process-component as claimed in claim 22, wherein the intermediate layer is generated electrochemically.

Serial No. 10/541,691

Atty. Doc. No. 2002P17431WOUS

25. (new) A process for producing metallic single crystal structures from metallic super alloys, comprising:

providing a substrate with a single crystal structure; and

depositing a single crystal material overlayer made by epitaxial growth of a layer applied by a first material application process;

characterized in that:

an intermediate layer is applied to the substrate prior to the deposition of the overlayer, wherein no single crystal or directionally grown structure is present in the intermediate layer; and

wherein the intermediate layer is applied by a second material application process different than the first material application process;

wherein the overlayer is epitaxially grown on the intermediate layer.

26. (new) The process of claim 25, wherein the second material application process comprises an electro-deposition process.